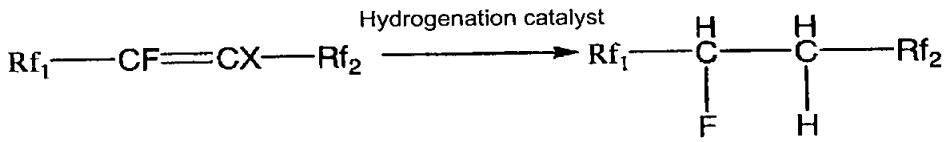
ABSTRACT OF THE DISCLOSURE

Porous calcium fluoride having a large surface area, a method for producing the same, a catalyst (for hydrogenation reaction in particular) using the porous calcium fluoride as a carrier with superior activity, selectivity, and durability, and a method for producing trihydrofluorocarbon using the catalyst. The porous calcium fluoride having a BET surface area of $20m^2/g$ to $200\ m^2/g$ is prepared by reacting soda lime with hydrogen fluoride. The carried cataryst (for hydrogenation reaction in particurar) is obtained by causing a metal or metal compound to be carried on carrier formed of the porous calcium fluoride. Trihydrofluorocarbon (2) is produced by causing a fluoroalkene (1) to contact hydrogen in the presence of the catalyst for hydrogenation reaction.



(1) (2)

wherein X denotes a halogen atom, Rf_1 and Rf_2 individually denote a fluorine or a parafluoroalkyl group, and Rf_1 may be bonded to Rf_2 to form a ring.